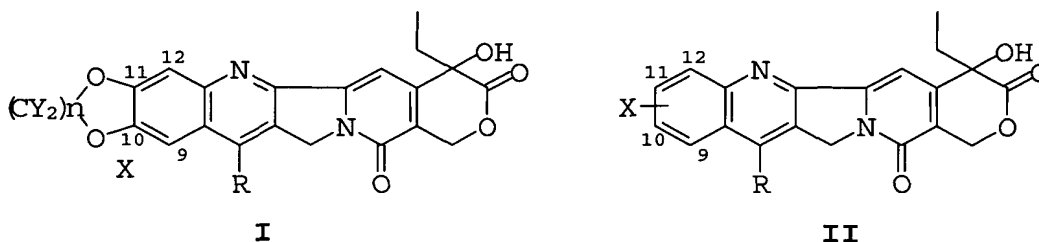


WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS  
PATENT OF THE UNITED STATES IS:

1. A method for the preparation of 7-substituted camptothecin compounds of formula (I) or (II):



where

X is H, NH<sub>2</sub>, H, F, Cl, Br, O-C<sub>1-6</sub> alkyl, S-C<sub>1-6</sub> alkyl, NH-C<sub>1-6</sub> alkyl, N(C<sub>1-6</sub> alkyl)<sub>2</sub>, or C<sub>1-8</sub> alkyl,

or X is -Z-(CH<sub>2</sub>)<sub>a</sub>-N-(C<sub>1-6</sub> alkyl)<sub>2</sub> wherein Z is selected from the group consisting of O, NH and S, and a is an integer of 2 or 3,

or X is -CH<sub>2</sub>NR<sup>2</sup>R<sup>3</sup>, where (a) R<sup>2</sup> and R<sup>3</sup> are, independently, hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-7</sub> cycloalkyl, C<sub>3-7</sub> cycloalkyl-C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> COR<sup>4</sup> where R<sup>4</sup> is hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-7</sub> cycloalkyl, C<sub>3-7</sub> cycloalkyl-C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl, or (b) R<sup>2</sup> and R<sup>3</sup> taken together with the nitrogen atom to which they are attached form a saturated 3-7 membered heterocyclic ring which may contain a O, S or NR<sup>5</sup> group, where R<sup>5</sup> is hydrogen, C<sub>1-6</sub> alkyl, alkyl, aryl, aryl substituted with one or more groups selected from the group consisting of C<sub>1-6</sub> alkyl, amino, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkyl C<sub>1-6</sub> alkoxy, aryl, and aryl substituted with one or more C<sub>1-6</sub> alkyl, or C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl groups;

R is C<sub>1-30</sub> alkyl, substituted C<sub>1-30</sub> alkyl, C<sub>1-30</sub> alkenyl, substituted C<sub>1-30</sub> alkenyl, C<sub>1-30</sub> alkynyl, substituted C<sub>1-30</sub> alkynyl, C<sub>3-30</sub> cycloalkyl, substituted C<sub>3-30</sub> cycloalkyl, C<sub>6-18</sub> aryl,

substituted C<sub>6-18</sub> aryl, C<sub>6-18</sub> aryalkyl, (C<sub>1-30</sub> alkyl)<sub>3</sub> silyl or (C<sub>1-30</sub> alkyl)<sub>3</sub> silyl C<sub>1-30</sub> alkyl,

Y is independently H or F,

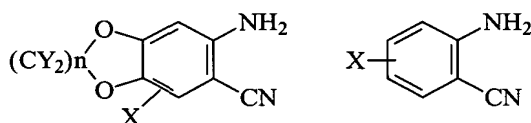
and

n is an integer of 1 or 2,

and salts thereof

comprising:

i) reacting an ortho amino cyano aromatic compound of formula (III) or (IV)

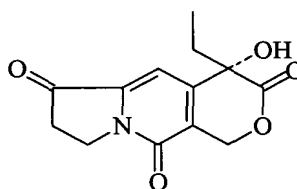


III

IV

with an organometallic reagent R -M and

ii) condensing a resulting product with a 20(S)tricyclic ketone of formula (VII)



VII

2. The method of claim 1, wherein R-M is selected from the group consisting of cyclohexylmagnesium halide, allyl magnesium halide, vinyl magnesium halide, ethyl magnesium halide, 4-fluorophenylmagnesium halide, isopropenyl magnesium halide, isopropyl magnesium halide, methyl magnesium halide, ethynyl magnesium halide, cyclopentyl magnesium halide, phenyl magnesium halide, benzyl magnesium halide, propyl magnesium halide, 1-propynyl magnesium halide, *p*-tolyl magnesium halide, *o*-tolyl magnesium halide, 1-trimethylsilylmethyl magnesium halide, hexyl magnesium halide, 2-thiophenyl magnesium halide, 4-dimethylaminophenyl magnesium halide, 4-chloro 1-butenyl

2-magnesium halide, *p*-methoxybenzyl magnesium halide, methoxymethyl magnesium halide, and *p*-chloro phenylmagnesium halide, *n*-butyl magnesium halide, *s*-butyl magnesium halide, *t*-butyl magnesium halide and *p*-trifluoromethylphenylmagnesium halide.

3. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is *n*-butyl magnesium halide, and R<sup>7</sup> is *n*-butyl.

4. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is benzyl magnesium halide, and R<sup>7</sup> is benzyl.

5. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is *p*-tolyl magnesium halide, and R<sup>7</sup> is *p*-tolyl.

6. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is 4-fluorophenyl magnesium halide, and R<sup>7</sup> is 4-fluorophenyl.

7. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is *p*-chlorophenyl magnesium halide, and R<sup>7</sup> is *p*-chlorophenyl.

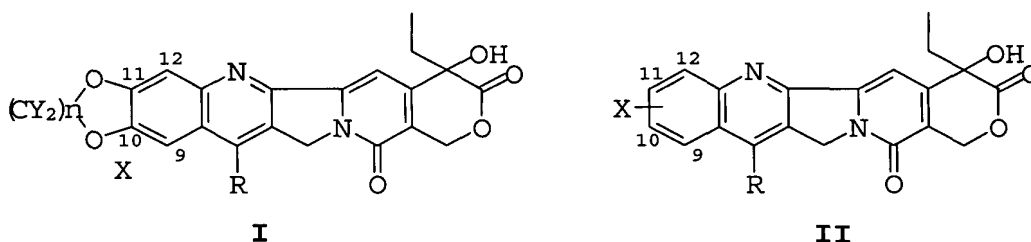
8. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (III), R-M is *p*-trifluoromethylphenyl magnesium halide, and R<sup>7</sup> is *p*-trifluoromethylphenyl.

9. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (IV), R-M is *n*-butyl magnesium halide, and R<sup>7</sup> is *n*-butyl.

10. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (IV), R-M is *s*-butyl magnesium halide, and R<sup>7</sup> is *s*-butyl.

11. The method of claim 2, wherein said ortho amino cyano aromatic compound is a compound of formula (IV), R-M is *t*-butyl magnesium halide, and R<sup>7</sup> is *t*-butyl.

12. A 7-substituted camptothecin compound of formula (I) or (II):



wherein

or X is  $-\text{Z}-(\text{CH}_2)_a-\text{N}-(\text{C}_{1-6} \text{ alkyl})_2$  wherein Z is selected from the group consisting of O, NH and S, and a is an integer of 2 or 3,

or X is  $-\text{CH}_2\text{NR}^2\text{R}^3$ , where (a)  $\text{R}^2$  and  $\text{R}^3$  are, independently, hydrogen,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{3-7}$  cycloalkyl,  $\text{C}_{3-7}$  cycloalkyl- $\text{C}_{1-6}$  alkyl,  $\text{C}_{2-6}$  alkenyl,  $\text{C}_{1-6}$  alkoxy- $\text{C}_{1-6}$  COR<sup>4</sup> where  $\text{R}^4$  is hydrogen,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{3-7}$  cycloalkyl,  $\text{C}_{3-7}$  cycloalkyl- $\text{C}_{1-6}$  alkyl,  $\text{C}_{2-6}$  alkenyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkoxy- $\text{C}_{1-6}$  alkyl, or (b)  $\text{R}^2$  and  $\text{R}^3$  taken together with the nitrogen atom to which they are attached form a saturated 3-7 membered heterocyclic ring which may contain a O, S or NR<sup>5</sup> group, where  $\text{R}^5$  is hydrogen,  $\text{C}_{1-6}$  alkyl, alkyl, aryl, aryl substituted with one or more groups selected from the group consisting of  $\text{C}_{1-6}$  alkyl, amino,  $\text{C}_{1-6}$  alkylamino,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkoxy- $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkoxy, aryl, and aryl substituted with one or more  $\text{C}_{1-6}$  alkyl, or  $\text{C}_{1-6}$  alkoxy- $\text{C}_{1-6}$  alkyl groups;

Y is independently H or F,  
and

n is an integer of 1 or 2,  
and salts thereof.

13. The 7-substituted camptothecin compound of claim 12, wherein R is selected from the group consisting of cyclohexyl, allyl, vinyl, 4-fluorophenyl, ethynyl, cyclopentyl, phenyl, benzyl, 1-propynyl, *p*-tolyl, *o*-tolyl, 1-trimethylsilylmethyl, hexyl, 2-thiophenyl, 4-dimethylaminophenyl, 2-(4-chloro 1-butenyl), *p*-methoxylbenzyl, methoxymethyl, *p*-chloro phenyl, *s*-butyl, *t*-butyl, and *p*-trifluoromethylphenyl.

14. The 7-substituted camptothecin compound of claim 13, wherein R is benzyl.

15. The 7-substituted camptothecin compound of claim 13, wherein R is *p*-tolyl.

16. The 7-substituted camptothecin compound of claim 13, wherein R is *p*-fluorophenyl.

17. The 7-substituted camptothecin compound of claim 13, wherein R is *p*-chlorophenyl.

18. The 7-substituted camptothecin compound of claim 13, wherein R is *p*-trifluoromethylphenyl.

19. The 7-substituted camptothecin compound of claim 13, wherein R is *s*-butyl.

20. The 7-substituted camptothecin compound of claim 13, wherein R is *t*-butyl.